SP-8
MAY 1970

COMPUTATION SHEET

SECTIONS OF CULVERT UNDER EXCESSIVE FILLS

COUNTY Gold ROUTE I-1000 PROJECT I-1000-6(12)

STAND. 703.20, SPAN (S) 11' HEIGHT (H) 9', LGTH. 32', SECTION D, FILL 30'
(Dimensions in Feet)

CONCRETE

TOP SLAB (D1) 19" BOT. SLAB (D2) 20 1/8" SIDEWALLS (T) 12 1/2"
(Dimensions in Inches) (Data from the Division of Bridges)

$[(S+2T) \times (H+D1+D2)] - (S \times H) =$ SQ. INCHES

[157) x (135.5] - (12,672) = 8,601.5 SQ. INCHES

ADD FOR HAUNCH ON RIGID FRAME BOXES. $2X^2$ = 162.0 SQ. INCHES

TOTAL = 8,763.5 SQ. INCHES

SQ. INCHES x 0.0002572 = CU. YDS./FT. BOX

CU. YDS./FT. BOX x LENGTH OF SECT. (IN FT.) = CONCRETE IN SECTION

8,763.5 SQ. IN. x 0.0002572 x 32 FT. = 72.13 CU. YDS.

STEEL

BAR	SIZE NO.	SPACING	LENGTH FT. - IN.	NUMBER OF BARS	TOTAL FEET	WEIGHT PER FOOT	TOTAL WEIGHT
A1	#11 *	8 1/2" *	12'-9"	45	573.75	5.313	3048.3
A2	#11 *	8 1/2" *	12'-9"	45	573.75	5.313	3048.3
A3	#6 *	7" *	9'-0"	110	990.00	1.502	1487.0
A4	#6 *	7" *	9'-0"	110	990.00	1.502	1487.0
B	#5 *	12" *	11'-0"	64	704.00	1.043	734.3
F	#4 *		16'-3" **	88 **	1430.00	0.668	955.2

TOTAL WEIGHT OF STEEL FOR SECTION 10,760.1

NOTES

*The data on the size and spacing of all A, B & F bars will be furnished by the Division of Bridges.

The length of any and all bars be increments of 3".
The maximum length of A1 and A2 bars will be (S+2T-3") use nearest 3" less.
The minimum length of A3 & A4 bars will be (Y+T+D1+H/2-4-1/2"+12 bar Dia.) use nearest 3" more.
The maximum length of B bars will be (H+D1+D2-3") use nearest 3" less.
The number of A1 or A2 bars is equal to $\frac{\text{Length of Section in Inches}}{\text{Spacing}}$.
The number of A3, A4, or B bars is equal to 2 x $\frac{\text{Length of Section in Inches}}{\text{Spacing}}$.

**The number and length of F bars will be furnished by the Division of Bridges.

Computation Sheet-Sections of Culvert Under Excessive Fills

Figure 9-10.3